8月19日

笔记

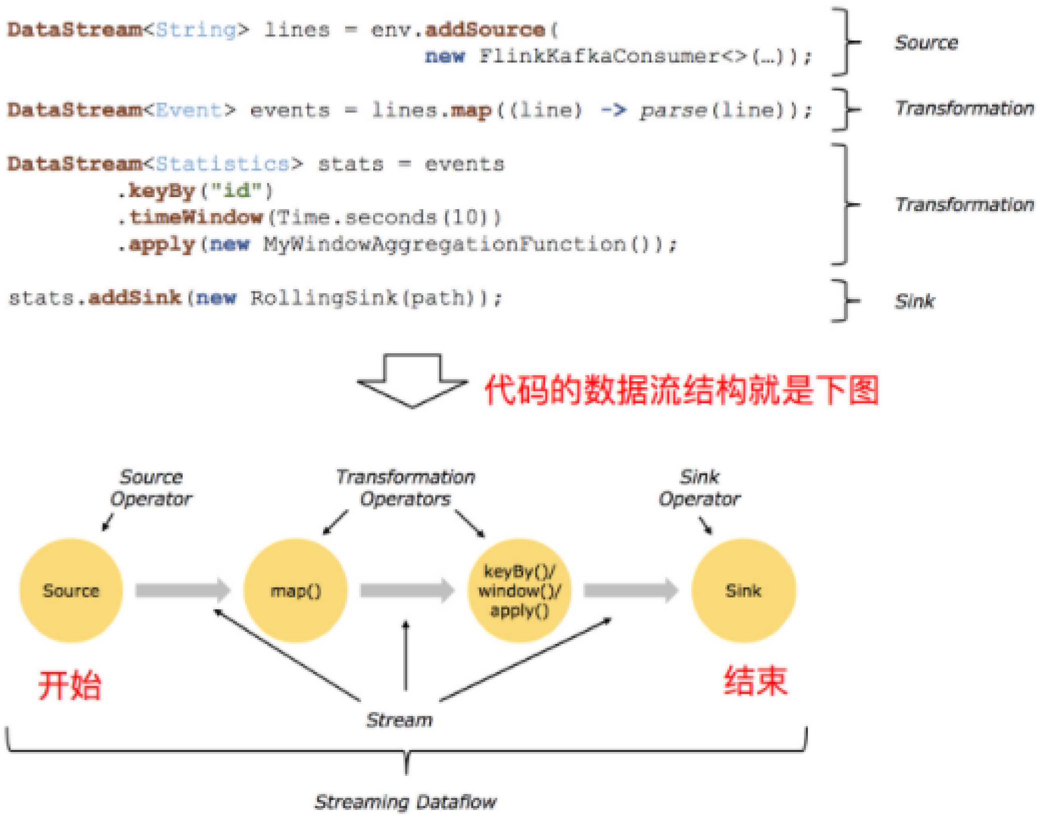
哈希算法作用：

1. 安全加密：哈希算法应用之安全加密，MD5和SHA。
2. 唯一标识
3. 数据校验，检验下载的文件是否完整或被恶意篡改
4. 散列函数
5. 负载均衡。客户端ip地址进行哈希，然后取模运算
6. 数据分片。同一关键词哈希一样，会被放到一个服务器中，方便统计次数
7. 判断图片是否在图库中。在服务器中使用散列表存储图片，用哈希函数计算图片哈希，分配不同的服务器
8. 分布式存储，一致性哈希

flink

flink程序的数据流结构：

- source：数据输入，flink在流处理和批处理上的source有:本地集合的source、文件的source、网络套接字的source、自定义的source一般有kafka、mq、nifi
- transtformation：数据转换的各种操作，有map，flatmap，filter，keyby，reduce，fold，split，select 等操作，可以将数据转换计算成想要的数据
- sink：数据输出，flink将转换尖酸后的数据发送的地点，有：文件，打印，写入socket、自定义sink：kafka、rabbitmq、mysql 、es 、hadoop filesys



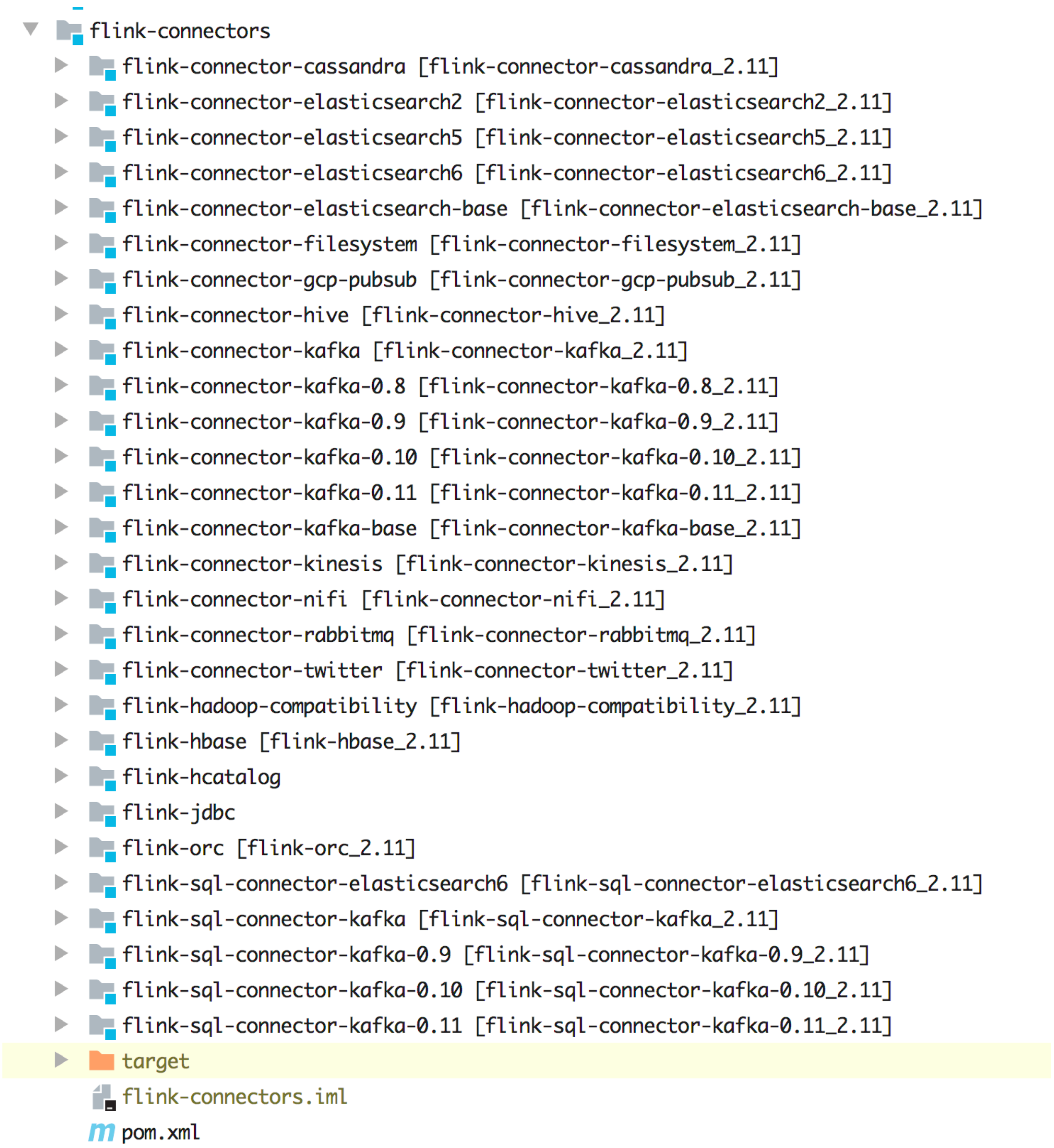
```
DataStream<String> lines = env.addSource(
                               new FlinkKafkaConsumer<>(…));

DataStream<Event> events = lines.map((line) -> parse(line));

DataStream<Statistics> stats = events
        .keyBy("id")
        .timeWindow(Time.seconds(10))
        .apply(new MyWindowAggregationFunction());

stats.addSink(new RollingSink(path));
```

有很多不同版本的connector



```
▼ flink-connectors
    ▶ flink-connector-cassandra [flink-connector-cassandra_2.11]
    ▶ flink-connector-elasticsearch2 [flink-connector-elasticsearch2_2.11]
    ▶ flink-connector-elasticsearch5 [flink-connector-elasticsearch5_2.11]
    ▶ flink-connector-elasticsearch6 [flink-connector-elasticsearch6_2.11]
    ▶ flink-connector-elasticsearch-base [flink-connector-elasticsearch-base_2.11]
    ▶ flink-connector-filesystem [flink-connector-filesystem_2.11]
    ▶ flink-connector-gcp-pubsub [flink-connector-gcp-pubsub_2.11]
    ▶ flink-connector-hive [flink-connector-hive_2.11]
    ▶ flink-connector-kafka [flink-connector-kafka_2.11]
    ▶ flink-connector-kafka-0.8 [flink-connector-kafka-0.8_2.11]
    ▶ flink-connector-kafka-0.9 [flink-connector-kafka-0.9_2.11]
    ▶ flink-connector-kafka-0.10 [flink-connector-kafka-0.10_2.11]
    ▶ flink-connector-kafka-0.11 [flink-connector-kafka-0.11_2.11]
    ▶ flink-connector-kafka-base [flink-connector-kafka-base_2.11]
    ▶ flink-connector-kinesis [flink-connector-kinesis_2.11]
    ▶ flink-connector-nifi [flink-connector-nifi_2.11]
    ▶ flink-connector-rabbitmq [flink-connector-rabbitmq_2.11]
    ▶ flink-connector-twitter [flink-connector-twitter_2.11]
    ▶ flink-hadoop-compatibility [flink-hadoop-compatibility_2.11]
    ▶ flink-hbase [flink-hbase_2.11]
    ▶ flink-hcatalog
    ▶ flink-jdbc
    ▶ flink-orc [flink-orc_2.11]
    ▶ flink-sql-connector-elasticsearch6 [flink-sql-connector-elasticsearch6_2.11]
    ▶ flink-sql-connector-kafka [flink-sql-connector-kafka_2.11]
    ▶ flink-sql-connector-kafka-0.9 [flink-sql-connector-kafka-0.9_2.11]
    ▶ flink-sql-connector-kafka-0.10 [flink-sql-connector-kafka-0.10_2.11]
    ▶ flink-sql-connector-kafka-0.11 [flink-sql-connector-kafka-0.11_2.11]
    ▶ target
      flink-connectors.iml
      pom.xml
```